

Activity Book Development (published July 12, 2017):

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Activities were adapted from the following resources:

Bonfield, S. B., G. Margherio, and R. Papish. *The Junior Birder Journal and Activity Book*. Environment for the Americas, Boulder, CA.

Fee, J. M. 2015. *Bird Sleuth: Investigating Evidence*. Cornell Lab of Ornithology, Ithaca, NY.

Nisqually Reach Nature Center. *A Field Guide to Billy Frank Jr. Nisqually National Wildlife Refuge*. BFNJNWR, Olympia, WA.

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The USFWS Field & Activity Guide to Birds of McLane Creek & Woodard Bay



NAME: _____

DATE: _____

McLane Creek Nature Trail



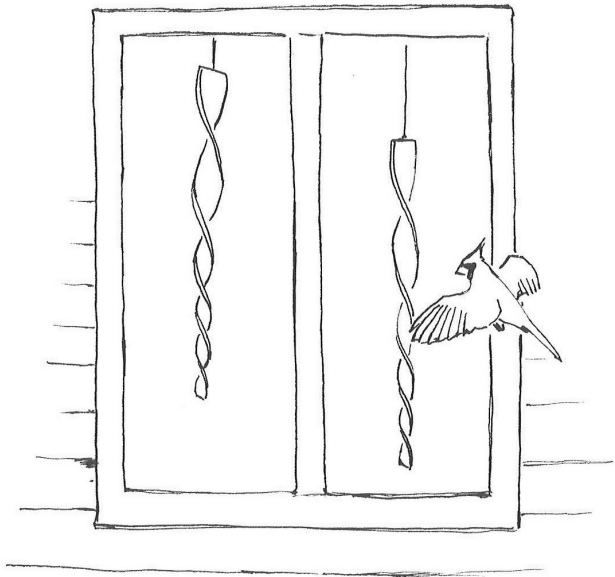
Notes

An open space for your birdy notes, questions, thoughts, and feelings!

Take Action for Birds: Stop Collisions

A glass window is often invisible to birds, and if it reflects the trees, bushes, or sky, a bird may fly into it. Take a walk outside of your house or building. Is it hard to see any of the windows?

Make your home safe for birds: hang streamers of shiny ribbon outside problem windows to alert birds.



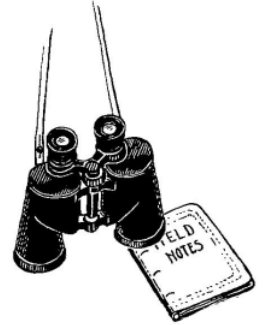
Other ways to reduce bird collisions:

- Move indoor plants far enough away from windows that they can't be seen from the outside by birds.
- Keep blinds and shades closed as much as possible, especially at night and during spring and fall migrations.
- Collect information on collisions to recognize patterns.
- Share your knowledge of bird conservation with your friends, families, and neighbors!

Birding Basics

Binocular use—keep it simple!

First spot the bird with your unaided eyes. With your head still and eyes kept on the bird, lift the binoculars to your eyes and look through them. Avoid scanning wildly through the trees. Don't get discouraged, because birds are pretty fast-moving targets.



Bird identification—be a detective!

- Identifying birds is all about **collecting clues** as quickly as you can. You may only get to see the bird for a second or two.
- Make **quick sketches and notes** in your notebooks. Turn to the field guide only after you have made a thorough observation.
- There is much more to a bird than the color of its feathers! Many clues to identifying birds have less to do with color and more to do with **where the bird is** and **what it is doing**.
- Try to make observations that fall within all four of the categories below. If you can do this, you'll be an expert birder in no time!

Size & Shape



Behavior



Habitat



Color & Pattern



eBird Field Checklist

McLane Creek Nature Trail
Thurston, Washington, US
56 species - July, All Years

Date: _____ Start Time: _____ Duration: _____

Distance: _____ Party Size: _____

Notes:

Waterfowl

- ___ Wood Duck *Aix sponsa*
- ___ Mallard *Anas platyrhynchos*
- ___ Hooded Merganser *Lophodytes cucullatus*

Loons & Grebes

- ___ Pied-billed Grebe *Podilymbus podiceps*

Hérons, Ibis, & Allies

- ___ Great Blue Heron *Ardea herodias*
- ___ Green Heron *Butorides virescens*

Vultures, Hawks, & Allies

- ___ Turkey Vulture *Cathartes aura*
- ___ Cooper's Hawk *Accipiter cooperii*
- ___ Bald Eagle *Haliaeetus leucocephalus*

Rails, Gallinules, & Allies

- ___ Virginia Rail *Rallus limicola*
- ___ Sora *Porzana carolina*

Pigeons & Doves

- ___ Band-tailed Pigeon *Patagioenas fasciata*
- ___ Mourning Dove *Zenaida macroura*

Swifts

- ___ Vaux's Swift *Chaetura vauxi*

Hummingbirds

- ___ Anna's Hummingbird *Calypte anna*
- ___ Rufous Hummingbird *Selasphorus rufus*

Kingfishers

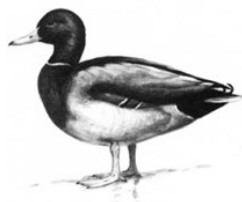
- ___ Belted Kingfisher *Megasceryle alcyon*

Woodpeckers

- ___ Red-breasted Sapsucker *Sphyrapicus ruber*
- ___ Downy Woodpecker *Picoides pubescens*
- ___ Hairy Woodpecker *Picoides villosus*
- ___ Northern Flicker *Colaptes auratus*

Tyrant Flycatchers: Pewees, Kingbirds, & Allies

- ___ Western Wood-Pewee *Contopus sordidulus*
- ___ Willow Flycatcher *Empidonax traillii*
- ___ Pacific-slope Flycatcher *Empidonax difficilis*



Sit Spot #3



3. Answer the following questions with your partner:

- What was the most common behavior?
- Do you think this same bird would have different behaviors if you came back in the Fall? Why or why not?
- What kind of scientific questions could you ask about your bird's different behaviors and how would you study them?

Vireos

- ___ Hutton's Vireo *Vireo huttoni*
- ___ Cassin's Vireo *Vireo cassinii*
- ___ Warbling Vireo *Vireo gilvus*
- ___ Red-eyed Vireo *Vireo olivaceus*

Jays, Magpies, Crows, & Ravens

- ___ Steller's Jay *Cyanocitta stelleri*
- ___ American Crow *Corvus brachyrhynchos*
- ___ Common Raven *Corvus corax*

Martins & Swallows

- ___ Violet-green Swallow *Tachycineta thalassina*
- ___ Barn Swallow *Hirundo rustica*
- ___ Cliff Swallow *Petrochelidon pyrrhonota*

Tits, Chickadees, & Titmice

- ___ Black-capped Chickadee *Poecile atricapillus*
- ___ Chestnut-backed Chickadee *Poecile rufescens*

Nuthatches

- ___ Red-breasted Nuthatch *Sitta canadensis*

Treecreepers

- ___ Brown Creeper *Certhia americana*

Wrens

- ___ Pacific Wren *Troglodytes pacificus*
- ___ Marsh Wren *Cistothorus palustris*
- ___ Bewick's Wren *Thryomanes bewickii*

Thrushes

- ___ Swainson's Thrush *Catharus ustulatus*
- ___ American Robin *Turdus migratorius*

Starlings & Mynas

- ___ European Starling *Sturnus vulgaris*

Waxwings

- ___ Cedar Waxwing *Bombycilla cedrorum*

Wood-Warblers

- ___ Common Yellowthroat *Geothlypis trichas*
- ___ Black-throated Gray Warbler *Setophaga nigrescens*
- ___ Wilson's Warbler *Cardellina pusilla*

Sparrows & other Emberizids

- ___ Dark-eyed Junco *Junco hyemalis*
- ___ Song Sparrow *Melospiza melodia*
- ___ Spotted Towhee *Pipilo maculatus*

Cardinals, Grosbeaks, & Allies

- ___ Western Tanager *Piranga ludoviciana*
- ___ Black-headed Grosbeak *Pheucticus melanocephalus*

Blackbirds

- ___ Red-winged Blackbird *Agelaius phoeniceus*

Finches, Euphonias, & Allies

- ___ Purple Finch *Haemorhous purpureus*
- ___ American Goldfinch *Spinus tristis*



Citizen Science

Lots of scientists start out as citizen scientists.

There are many citizen science projects out there that you can join or create, even from your own backyard! Some citizen science projects focus on a specific place, such as on a prairie or estuary. Others, such as the Audubon Christmas Bird Count, rely on participants from all around the country.



eBird is a global citizen-science project for documenting bird species.

The observations of each participant join those of others in an international network of eBird users. This valuable information on bird abundance and distribution is shared with a global community of educators, land managers, ornithologists, and conservation biologists. Whether your project is large or small, you can make a difference in your community and help provide data to better understand our planet!



Other bird citizen-science projects: Project FeederWatch, NestWatch, Celebrate Urban Birds, Christmas Bird Count, Global Big Day, Hummingbirds at Home, Great Backyard Bird Count.



1. With a partner, select one bird species in the Weyer Point area that interests the both of you.
2. In a ten-minute period, for one individual bird of that species, fill in the table below with the different behaviors, the number of times you see each behavior, and any notes. While you are observing, try to be unobtrusive and quiet as possible because your own behavior may affect the bird's activities.

Surveyed species: _____

Behaviors	Tally of Behaviors Seen	Notes

Bird Behavior

Observation skills are helpful in many professions that involve closely watching, accurately describing, and understanding different behaviors. People who study animal behavior are typically trying to answer one or more of these sort of questions:



- What is the cause of the behavior?
- How did the behavior develop within the individual's lifetime?
- What function or functions does the behavior serve?
- How did the behavior evolve over time?

Ethograms

An **ethogram** is a catalogue of the different behaviors of your bird species. In order to be a useful scientific tool for studying behavior, your ethogram's behavior descriptions must be clear and complete.

Here are some examples of common bird behaviors:

Locomotion:

- Running
- Skipping
- Side-stepping
- Hopping
- Floating
- Swimming on surface
- Diving
- Powered flight
- Gliding
- Soaring
- Taking off

Maintenance:

- Preening
- Stretching
- Bathing
- Oiling
- Panting
- Wing scratching
- Bill wiping

Comfort movement:

- Stretching
- Wing flapping
- Shaking/feather setting

Sleeping:

- One leg retraction
- Head retracted into shoulders
- While afloat

Anointing:

- Water bathing
- Dust bathing
- Anting

Parental behavior:

- Disposing of egg shells
- Brooding
- Shading
- Regurgitating food
- Teaching

Predator response:

- Hiding/fleeing
- Alarm calling
- Freezing in place
- Mobbing
- Distraction displaying

Response to climate variables:

- Fluffing the plumage
- Standing on one leg
- Panting
- Gular flapping
- Wetting the body
- Seeking shade
- Sunbathing
- Wing drying

Draw a Scientist

What comes to mind when you hear the word "scientist?" Take five minutes to draw what a scientist looks like and what a scientist does.



Share your drawing with a partner. As a group, discuss these questions:

- How many drew male scientists? Females? How old are they?
- How many of the scientists are working inside? Outside?
- Who drew a "mad scientist?" Why?
- What are some stereotypes about scientists and are they true?
- Who drew a scientist doing something that you'd like to do?



Female Scientist #4: _____



How was she first inspired to pursue a career in science and nature?

What kind of scientific work is she currently involved in?

What were two challenges that she faced as a woman in science and how did she overcome them?

What were some words of advice that you found useful?



Female Scientist #3: _____



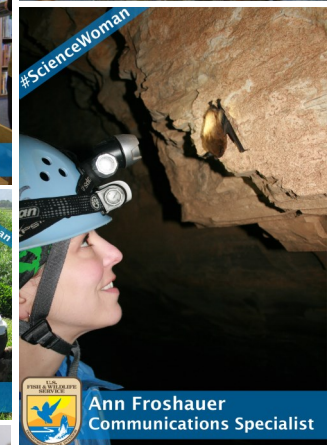
How was she first inspired to pursue a career in science and nature?

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What were some words of advice that you found useful?

You Can Be a Scientist!



Meet a Female Scientist

Throughout today's walk, female science professionals from the USFWS Washington Office and Evergreen State College will talk about their unique science experiences. Complete the mini biographies below. Ask questions!

Female Scientist #1: _____



How was she first inspired to pursue a career in science and nature?

What kind of scientific work is she currently involved in?

What were two challenges that she faced as a woman in science and how did she overcome them?

What were some words of advice that you found useful?

Female Scientist #2: _____



How was she first inspired to pursue a career in science and nature?

What kind of scientific work is she currently involved in?

What were two challenges that she faced as a woman in science and how did she overcome them?

What were some words of advice that you found useful?

Meet a Female Scientist

Throughout today's walk, female science professionals from the USFWS Washington Office and a young local birder will talk about their unique science experiences. Complete the mini biographies below. Ask questions!

Female Scientist #1: _____



How was she first inspired to pursue a career in science and nature?

What kind of scientific work is she currently involved in?

What were two challenges that she faced as a woman in science and how did she overcome them?

What were some words of advice that you found useful?

Female Scientist #2: _____



How was she first inspired to pursue a career in science and nature?

What kind of scientific work is she currently involved in?

What were two challenges that she faced as a woman in science and how did she overcome them?

What were some words of advice that you found useful?



Female Scientist #3: _____



How was she first inspired to pursue a career in science and nature?

What kind of scientific work is she currently involved in?

What were two challenges that she faced as a woman in science and how did she overcome them?

What were some words of advice that you found useful?

Tyrant Flycatchers: Pewees, Kingbirds, & Allies

- ___ Willow Flycatcher *Empidonax traillii*
- ___ Hammond's Flycatcher *Empidonax hammondii*
- ___ Pacific-slope Flycatcher *Empidonax difficilis*

Vireos

- ___ Hutton's Vireo *Vireo huttoni*
- ___ Warbling Vireo *Vireo gilvus*

Jays, Magpies, Crows, & Ravens

- ___ Steller's Jay *Cyanocitta stelleri*
- ___ American Crow *Corvus brachyrhynchos*

Martins & Swallows

- ___ Purple Martin *Progne subis*
- ___ Tree Swallow *Tachycineta bicolor*
- ___ Violet-green Swallow *Tachycineta thalassina*
- ___ Barn Swallow *Hirundo rustica*

Tits, Chickadees, & Titmice

- ___ Black-capped Chickadee *Poecile atricapillus*
- ___ Chestnut-backed Chickadee *Poecile rufescens*

Nuthatches

- ___ Red-breasted Nuthatch *Sitta canadensis*

Treecreepers

- ___ Brown Creeper *Certhia americana*

Wrens

- ___ Pacific Wren *Troglodytes pacificus*

Kinglets

- ___ Golden-crowned Kinglet *Regulus satrapa*

Thrushes

- ___ Swainson's Thrush *Catharus ustulatus*
- ___ American Robin *Turdus migratorius*

Starlings & Mynas

- ___ European Starling *Sturnus vulgaris*

Waxwings

- ___ Cedar Waxwing *Bombycilla cedrorum*

Wood-Warblers

- ___ Black-throated Gray Warbler *Setophaga nigrescens*
- ___ Wilson's Warbler *Cardellina pusilla*

Sparrows & other Emberizids

- ___ Dark-eyed Junco *Junco hyemalis*
- ___ Song Sparrow *Melospiza melodia*
- ___ Spotted Towhee *Pipilo maculatus*

Cardinals, Grosbeaks, & Allies

- ___ Western Tanager *Piranga ludoviciana*

Blackbirds

- ___ Brown-headed Cowbird *Molothrus ater*

Finches, Euphonias, & Allies

- ___ American Goldfinch *Spinus tristis*



eBird Field Checklist

Woodard Bay Conservation Area

Thurston, Washington, US

54 species - July, All Years

Date: _____ Start Time: _____ Duration: _____

Distance: _____ Party Size: _____

Notes:

Waterfowl

- ___ Green-winged Teal *Anas crecca*
- ___ Surf Scoter *Melanitta perspicillata*
- ___ Common Merganser *Mergus merganser*

Loons & Grebes

- ___ Pied-billed Grebe *Podilymbus podiceps*

Cormorants & Anhingas

- ___ Brandt's Cormorant *Phalacrocorax penicillatus*
- ___ Pelagic Cormorant *Phalacrocorax pelagicus*
- ___ Double-crested Cormorant *Phalacrocorax auritus*

Hérons, Ibis, & Allies

- ___ Great Blue Heron *Ardea herodias*

Vultures, Hawks, & Allies

- ___ Osprey *Pandion haliaetus*
- ___ Bald Eagle *Haliaeetus leucocephalus*

Shorebirds

- ___ Killdeer *Charadrius vociferus*
- ___ Greater Yellowlegs *Tringa melanoleuca*

Gulls, Terns, & Skimmers

- ___ Ring-billed Gull *Larus delawarensis*
- ___ California Gull *Larus californicus*
- ___ Glaucous-winged Gull *Larus glaucescens*
- ___ Western/Glaucous-winged Gull *Larus occidentalis/glaucescens*

Pigeons & Doves

- ___ Rock Pigeon *Columba livia*
- ___ Band-tailed Pigeon *Patagioenas fasciata*
- ___ Mourning Dove *Zenaida macroura*

Swifts

- ___ Vaux's Swift *Chaetura vauxi*

Kingfishers

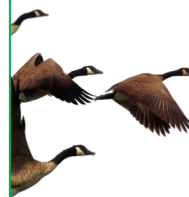
- ___ Belted Kingfisher *Megasceryle alcyon*

Woodpeckers

- ___ Hairy Woodpecker *Picoides villosus*
- ___ Northern Flicker *Colaptes auratus*
- ___ Pileated Woodpecker *Dryocopus pileatus*

Falcons & Caracaras

- ___ Peregrine Falcon *Falco peregrinus*



Female Scientist #4: _____



How was she first inspired to pursue a career in science and nature?

What kind of scientific work is she currently involved in?

What were two challenges that she faced as a woman in science and how did she overcome them?

What were some words of advice that you found useful?

Bird Illustration

Draw a bird! Sketch, label, and make notes about any patterns that you observe. Were there stripes on the head or wings? Also pay attention to the posture and proportions (it doesn't have to be an Audubon!).

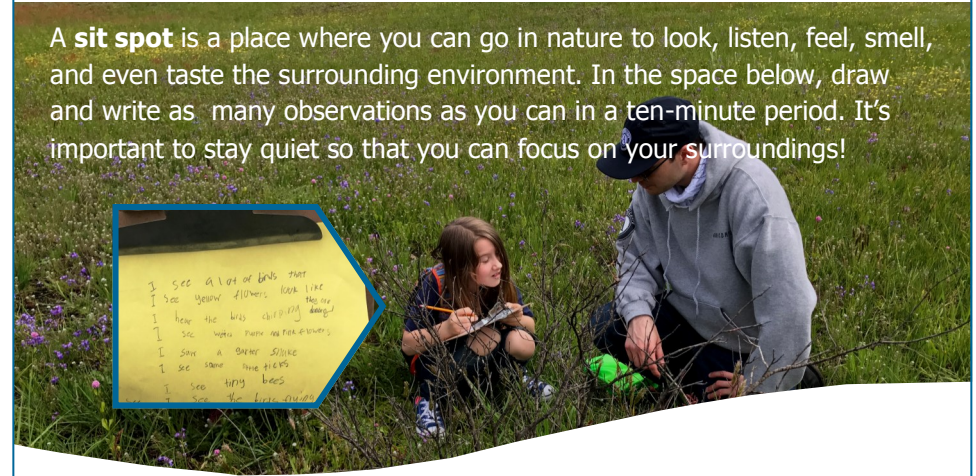
Time: _____ Habitat: _____

What is the bird doing? _____

Check out a bird guide to see if you can identify its species:

Sit Spot #2

A **sit spot** is a place where you can go in nature to look, listen, feel, smell, and even taste the surrounding environment. In the space below, draw and write as many observations as you can in a ten-minute period. It's important to stay quiet so that you can focus on your surroundings!



EXPLORE AND ENJOY THE WONDERS OF WOODARD BAY

Established in 1987 to protect wildlife habitat and unique cultural resources, this conservation area also offers opportunities for environmental education and wildlife viewing.



Loop Trail 1.5 mile

This primitive trail winds through the forest and includes sections of boardwalk and stairs.



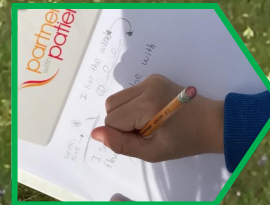
Whitham Road 3/4 mile

This walking route follows an old roadbed and leads to wildlife viewing areas and interpretive exhibits. If you need vehicular assistance, please contact the Department of Natural Resources to arrange access at 360-825-1631.



Sit Spot #1

A **sit spot** is a place where you can go in nature to look, listen, feel, smell, and even taste the surrounding environment. In the space below, draw and write as many observations as you can in a ten-minute period. It's important to stay quiet so that you can focus on your surroundings!



Sound Map

Sit and listen for five minutes. Like the girl in this photo, keep your eyes closed while you listen.

Use this circle to make a map of what you hear. The **X** marks where you are. When you hear a sound, create your own symbol that represents what you think the sound would look like—for example, a few lines showing wind or a musical note showing a songbird.

EXAMPLE



Photo: Billy Frank Jr. Nisqually NWR

X

Bird scientists also use Sound Maps! They have computer programs that convert bird sounds to visual representations, so that they can be compared and studied!



Photos: Rod Gilbert

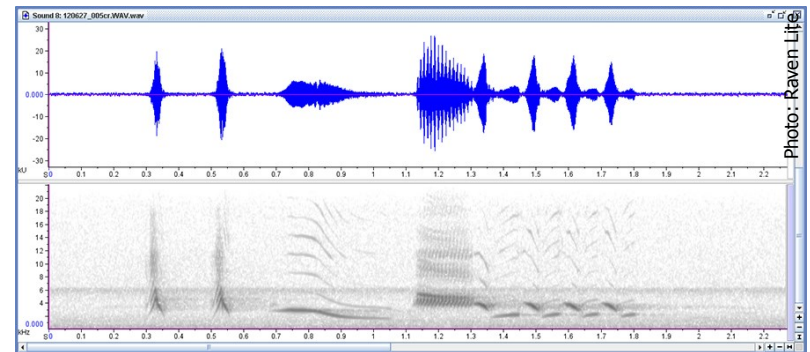


Photo: Raven Lite

These scientists seek to answer questions like:

- How and why do birds sing and call?
- How do human-made noises affect birds?
- Are birds able to adapt their songs to a noisier environment?